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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,497	08/29/2003	Henry F. Thorne	Aethon-0306	7754
36787	7590	10/13/2005		
BLYNN L. SHIDELER THE BLK LAW GROUP 3500 BROKKTREE ROAD SUITE 200 WEXFORD, PA 15090			EXAMINER KLEBE, GERALD B	
			ART UNIT	PAPER NUMBER
			3618	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/651,497	Applicant(s) THORNE, HENRY F.	
	Examiner Gerald B. Klebe	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 and 08 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

G. Klebe
3 October 2005

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/31/2004-8/12/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims Objections

1. The claims are objected-to because of the following informalities:

Claim 1 in line 12 recites the limitation: "the ground"; it is not proper to claim the earth or a portion thereof; it is suggested that the phrase "the ground" be replaced with a phrase such as --the supporting surface--[of the robotic cart];

Claim 1 in line 30: the word --is-- is missing between "sensor" and "mounted".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with functional and indefinite language, failing to positively set forth and distinguish Applicant's invention. For example:

Claim 1, in line 13 recites the limitation "approximately 1/5 of the wheel base"; it is not clear what this means; for examination purposes it will be interpreted as -- [approx] 1/5 the length of the wheel base--.

Claim 1, in line 25, claim 10 in line 4, claim 15 in line 4, and claim 18 in line 4 each recites the limitation: "under load"; this is an omnibus-type recitation providing no metes and bounds to what is being claimed.

Art Unit: 3618

Claim 1: in line 20 recites the limitation "the ... axles";

in line 27 recites the limitation "the annular contact patch";

in lines 35-36 recites the limitation "the robotic position";

Claim 2: in line 2 recites the limitation "the calibration system";

Claim 20: in line 6 recites the limitation "the cart attaching pole".

There is insufficient antecedent basis for each of these limitations in the respective claim.

Other examples exist. The claims should be reviewed and revised to recite the features of the claimed inventive concept in clear, concise and unambiguous terms which are consistent with the terminology of the specification as filed.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 19, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Borenstein (US 5559696), cited by Applicant.

Borenstein discloses a robotic cart-pulling vehicle (refer Figs1-2; item 20) comprising:
(re: claim 1) at least two axially collinear drive wheels (42, 44);

a robot body (24) mounted on the drive wheels;

Art Unit: 3618

a control system (inherent) on the robot body utilizing, at least in part, a ded-reckoning navigational system (refer col 4, lines 14-17);

a cart attaching mechanism (30) on the robot body for coupling a cart to the robotic vehicle(refer col 4, lines 36-38); and further,

wherein a positioning error reducing system is used for reducing accumulated error in the ded-reckoning navigational system (refer col 4, lines 17-27), the positioning error reducing system including at least one of **(taken by the examiner as the last listed, viz., that the connection between the robotic vehicle and the cart is both electrical and mechanical; refer subpara. v below)**:

i) a load transfer point of the cart attaching mechanism positioned at a height from the vehicle supporting surface that is below one of two alternative values recited in the claim [for the sake of brevity, not repeated here]; and,

ii) a floor variation compliance structure [for the sake of brevity, not repeated here]; and,

iii) a minimal wheel contact surface structure wherein each drive wheel includes an annular contact surface formed as a coating over a solid stiff cored and includes at least one of a set of various features as recited in the claim [for the sake of brevity, not further repeated here]; and,

iv) a calibration structure, [for the sake of brevity, not repeated here]; and,

v) both an electrical and a mechanical connection (Fig 1, combination of items 30 and 32) between the cart and the robotic vehicle (refer col 4, lines 58-60; and col 4, line 67 to col 5, line 7) formed with a cart attaching post positioned at a midpoint of the wheel base, wherein the cart attaching post is part of the cart attaching mechanism (as seen in Fig 1); and,

Art Unit: 3618

(re: claim 19) wherein the cart-attaching mechanism includes a cart-attaching bore (32) in the robot body and a cart-attaching post (30) within the cart attaching bore (refer col 4, lines 36-40), wherein the cart-attaching post provides both a mechanical and an electrical connection between the cart and the robot vehicle (refer refer col 4, lines 17-31).

Allowable Subject Matter

6. Claims 2-18 and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Prior Art made of Record

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The prior art of Reeve; of Wible et al.; of Roberts et al.; of Takeda et al.; of Quraishi; of Kawakami (-501); of Hori; of Holmquist; of Sommer; of Nakano et al.; of Galy; of Herbert et al.; and of Song et al. each show features in common with some of the other structures of the inventive concept disclosed in the instant application.

Conclusion

8. Any inquiry concerning this or earlier communication(s) from the examiner should be directed to Gerald B. Klebe at 571-272-6695; Mon.-Fri., 8:00 AM - 4:30 PM ET, or to Supervisory Patent Examiner Christopher P. Ellis, Art Unit 3618, at 571-272-6914.

Official correspondence should be sent to the following TC 3600 Official number as follows: 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 3618

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gbklebe / Art Unit 3618 / 3 October 2005



CHRISTOPHER P. ELLIS
SUPERVISORY PATENT ENGINEER
TECHNOLOGY CENTER 3600



Approved for entry
H. F. Thorne
15 August 2005

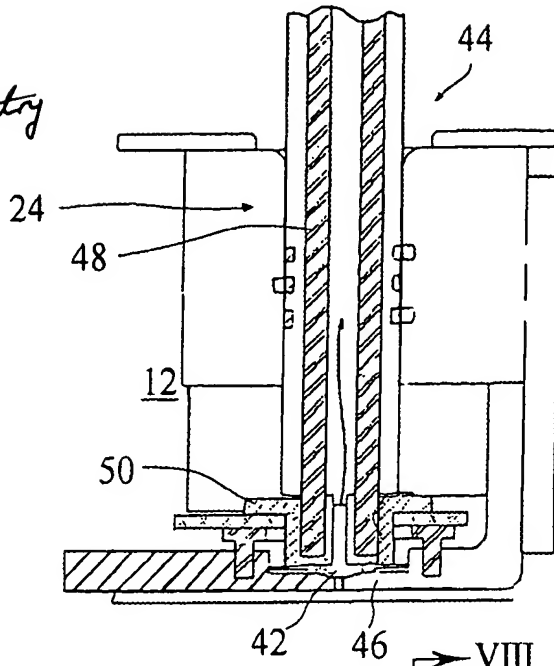


Figure 8A

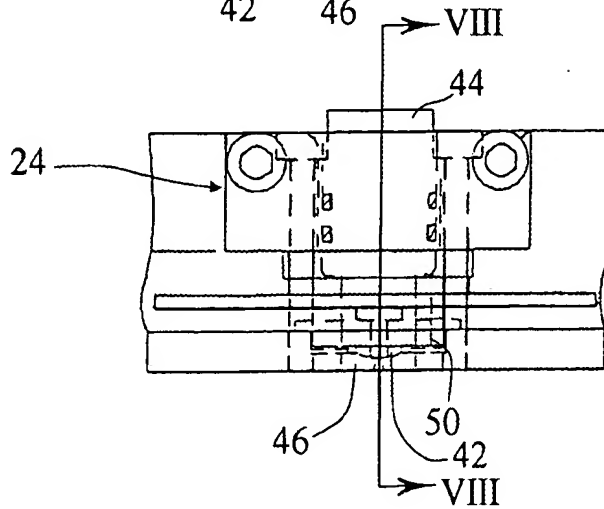


Figure 9A

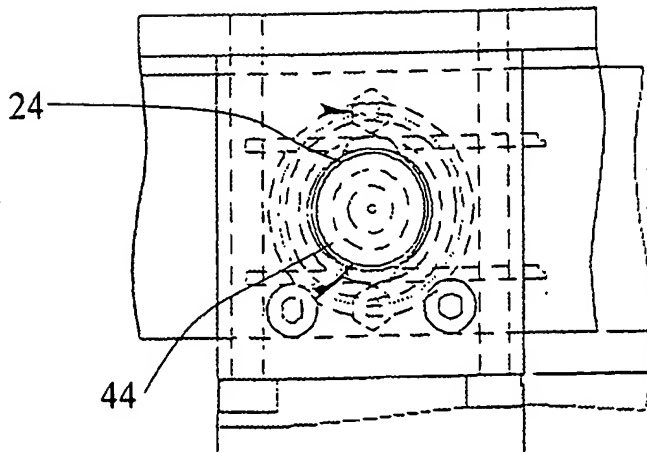


Figure 10